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ABSTRACT

The Peninsula Academies program operates two schools within schools, the electronics academy and the computer academy, in a three-year high school program for disadvantaged students labeled as potential dropouts in San Mateo County, California. A review of the performance of the Peninsula Academies program during its second year of operation (1982-83) showed that Academies students miss far fewer days of school than either their comparison group counterparts or students at their high schools as a whole. Mean scores and pass rates were also consistently higher for Academies students than for the non-Academy comparison groups on all three district proficiency tests--reading, mathematics, and written English. Academy students also had better grades and fewer "no credits" than their non-Academy comparison group counterparts. In addition, only 1 percent of Academy 10th-grade students dropped out of school this year compared to 8 percent of the comparison group. Attrition from the Academies program was significantly lower than last year. The survey data also presented a generally positive picture of the Academies this year. Students, parents, school personnel, and private industry representatives all gave the overall program high ratings. Recommendations were made for strengthening the program in the areas of clarification of the lines of responsibility for program management, better documentation of the computer laboratory curriculum, better inservice for the instructional staff, better definition of the target population, and more efforts at keeping parents informed. (KC)

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The Peninsula Academies
Second Yearly Interim Report

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THE PENINSULA ACADEMIES
SECOND YEARLY INTERIM REPORT

July 1, 1983

EXECUTIVE SUMMARY

AIR reviewed the performance of the Peninsula Academies program during its second year of operation. Data on attendance, proficiency test scores and pass rates, grades, and attrition were collected for Academy students and for a comparison group of non-Academy students with similar characteristics who were enrolled in Sequoia Union High School District schools. AIR also obtained information through surveys of program participants, including students, school personnel, parents, and representatives of the private sector. Together, these data provide feedback on the program's progress toward meeting its objectives and indicate areas where improvements are needed.

Attendance data show that Academies students miss far fewer days of school than either their comparison group counterparts or students at their high schools as a whole. Electronics Academy students averaged 87% attendance, compared to 74% for Sequoia High School as a whole during the 1982-83 school year; Computer Academy students averaged 86% attendance, compared to 75% for Menlo-Atherton High School as a whole. Mean scores and pass rates were also consistently higher for Academies students than for the non-Academy comparison groups on all three district proficiency tests--reading, math, and written English.

Academy students also had better grades and fewer "No Credits" than their non-Academy comparison group counterparts. In addition, only one percent of Academy 10th grade students dropped out of school this year, compared to eight percent of the non-Academy comparison group. Attrition from the Academies program is significantly lower than last year.

The survey data also present a generally positive picture of the Academies this year. Students, parents, school personnel, and private industry representatives all gave the overall program high ratings. They concurred that participating students have more positive attitudes toward school and toward themselves through exposure to the program. Students, parents, and school personnel also rated highly the quality of the program's facilities, equipment, books, learning materials, and instruction. These ratings were, in most cases, higher than those from last year's survey. One area where the program appears to have made a significant improvement over last year is in its overall planning and management, which was noted as a weak area at the end of the program's first year. In this year's survey, 57% of school personnel and 65% of private sector representatives rated overall planning and management as "excellent" or "good."

Areas where there is still room for improvement include the following:

- clarification of lines of responsibility for program management, especially regarding curriculum development and supervision of the mentor program;
- better documentation of the computer lab curriculum and stronger links between the academic curricula and the lab curricula at both Academies;
- stabilization of and support for the instructional staff, including better orientation for new teachers, especially the industry-loaned instructors;
- better definition of the target population in order to improve the selection process and thereby reduce attrition;
- keeping parents informed about program goals and activities and keeping the private sector more actively involved.

While these areas can be strengthened in the coming year, the Academies program has completed its second year with strong evidence that it is making a difference in the attitudes and achievements of the students it serves. It now appears ready to pass the most crucial final test--the successful school-to-work transition of its graduates.

SUMMARY PROGRAM DESCRIPTION

TITLE: Peninsula Academies

LOCATION: Sequoia Union High School District

CONTACT PERSONS: Charles W. Dayton, Peninsula Academies Director
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SPECIFIC PROBLEMS PROGRAM ADDRESSES: Despite the growth and prosperity of the high technology industries located in the area served by the Sequoia Union High School District (SUHSD), pockets of high unemployment exist in southern San Mateo County. The problem is particularly severe among disadvantaged and minority youth. Employment opportunities exist in the electronics and computer industries--in recent years some companies have even suffered from a scarcity of qualified job applicants. But many minority youth in the area have not been qualified for even semi-skilled, entry level jobs. Lagging behind in basic academic skills and lacking in career direction, many disadvantaged youth have dropped out of school before graduation. For example, in 1980, minority youth made up 59% of SUHSD dropouts, although they constituted only 25% of district enrollment. Proficiency test pass rates in reading, writing, and mathematics for this group were also below district averages. The Peninsula Academies program was designed to address three main problems: (1) the high dropout rate and low level of basic skills among minority and disadvantaged youth; (2) high unemployment among the same group, and (3) the shortage of qualified labor to fill entry-level and semi-skilled positions in the local high technology industries.

GOALS OF THE PROGRAM: The Academies' goals are to form a business-school partnership that will (1) meet the vocational training and basic academic needs of an educationally disadvantaged and largely minority population of students who are deemed at risk to become unemployed school dropouts; and (2) prepare these students for employment in the electronics and computer industries.

DESCRIPTION: The Peninsula Academies program operates two "schools within schools," the Electronics Academy and the Computer Academy. The three-year program offers a selected group of students a course of study that includes a core academic program (English, math, science) and electronics or computer technology taught in a lab setting; career planning and job search guidance; and frequent contacts with industry through field trips, invited speakers, and individual mentors. Classes are small and individual attention is emphasized. Summer job opportunities are made available to students who have fulfilled 11th grade requirements, and 12th graders are placed in part-time jobs during their last semester before graduation. Seniors are also assisted in finding permanent jobs upon graduation.

EDUCATIONAL LEVEL: This is a high-school-level program, serving students in grades 10 through 12.

HOW AND WHEN ESTABLISHED: In 1979, the Stanford Mid-Peninsula Urban Coalition, together with the Superintendent of the SUHSD, contacted local industry leaders to form the Academies partnership. Planning and Curriculum Committees were formed, and a Director and Coordinator were hired by the Coalition. The SUHSD appointed responsibility for the program to district staff members and designated the high schools where the academies were to be located. The first Academy classes began in September 1981, and the first seniors will graduate in June 1984.

ORGANIZATIONS INVOLVED: The Urban Coalition has served as the "catalyst" or mediator organization to establish the program, working closely with SUHSD administrators. Over 30 local industries have contributed to the program during its first two years, with six companies taking a leadership role: Hewlett-Packard, Varian, Lockheed Missiles & Space, Raychem, Atari, and Ampex. The American Institutes for Research acts as the program's external evaluator, funded by a grant from the William and Flora Hewlett Foundation.

FUNDING: Local industry donated all necessary equipment for both Academies, as well as providing loaned instructors, management committee members, mentors, and cash contributions. The school district, in addition to furnishing instructional materials and remodeled classroom space, provides academic teachers and administrative support. Start-up grants were received from the following philanthropic foundations: Edna McConnell Clark, William and Flora Hewlett, Henry J. Kaiser, Walter S. Johnson, Peninsula Community, San Francisco, David and Lucille Packard, and William Randolph Hearst.

IMPACT: The Academies currently serve 184 students in three grades at the two Academies. As of the end of its second year, the program was meeting most of its stated objectives. Academically, the students showed improved school attendance and basic skills. Academies student attendance rates were approximately 10 percentage points higher than the averages for their host schools, and they also had more days enrolled and fewer "cut" days than students in a matched comparison group. In addition, they had higher grade point averages and fewere "no credit" marks than the comparison group. Academy students, moreover, had consistently higher mean scores and pass rates on all three district proficiency tests. The work experience component of the program was also successful. All eligible 11th graders (63%) were placed in summer jobs, and of these, 97% successfully completed the summer work. The mean overall rating from company supervisors of the student workers was between "good" and "very good" (3.7 on a 5-point scale). Students worked alongside regular employees as data entry operators, computer operator/analysts, electronics assemblers, assistant technicians, and the like. Finally surveys of students, parents, teachers, and other program staff indicated that participating students have more positive attitudes toward school, work, and themselves through exposure to the program. The Academies program was selected in 1982 as an exemplary secondary program by the State of California Department of Education. Two other "Silicon Valley" districts are interested in starting Academies programs, and visitors have come to examine the program from around the country and even from Europe.

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1. Introduction

The Peninsula Academies Program completed its second year of operation in June 1983. During this year, the American Institutes for Research (AIR), continuing in the role of program evaluator, documented activities, provided technical assistance upon request, and collected data on selected outcomes. The purpose of this report is to summarize the program's accomplishments during its second year, as well as to point out possible improvements. The report is intended to help guide Academies' managers down a clearer path in their third year. This report is not a final evaluation statement but rather a means to help clarify and modify Academies processes as the program begins the final year of its first three-year cycle.

Brief Description of the Peninsula Academies in Year Two

1982-83 program changes. The Academies began the second year with some changes in the personnel who are key to its operation. A new Superintendent came to the Sequoia Union High School District and a new Principal was appointed at Menlo-Atherton High School, home of the Computer Academy. In addition, the Stanford Mid-Peninsula Urban Coalition also welcomed a new Executive Director and a new director for the Peninsula Academies. At the classroom level, most of the teachers were also new to the program in September, only 3 of the 13 having been with the program last year.

Along with these personnel changes in the fall of 1982 came two organizational changes. First, a "lead teacher" or department chairperson was appointed to each Academy to coordinate the program at the school level, in cooperation with the principals and instructional vice-principals. Both lead teachers also taught Academy classes. The second change was the appointment of a special Academies counselor at each school. All Academies students were assigned to their Academy's counselor, who also served a complement of regular, non-Academy students for a full counseling load.

Finally, two new components of the Academy got underway in the 1982-83 school year. One was the mentor program, which began in October 1982 with

an orientation meeting of volunteer mentors from industry. Sixty-four industry mentors were "matched" with student or teacher mentees at a general meeting in November. The second new component was the summer jobs program for 11th graders who completed the year in good standing. This important program component is just starting as the school year ends and this report is being written.

Staff and students. The 1982-83 school year staff at the Electronics Academy consisted of the counselor and five teachers: the lead teacher, who also served as the English teacher, one science teacher, one math teacher, and two electronics lab instructors, one of whom was on half-day loan from industry. The teachers were assisted by two classroom aides. Ten Academy class sections were taught, all but one of which were comprised completely of Academy students. The average class size was 22 students; the electronics lab classes averaged 20 students and the academic classes averaged just over 22 students (with a range of 18 to 27).

At the Computer Academy, the staff consisted of the counselor and eight teachers: the lead teacher, who also taught science, another science teacher, two math teachers, one English teacher, one full-time industry-loaned computer instructor, and two part-time computer instructors, each of whom served for one semester. One of the part-time computer instructors was loaned from industry, and the other was an Urban Coalition employee. One classroom aide was also employed in the Academy classes. Twelve class sections were taught, in two of which Academy and non-Academy students were mixed. The average class size was 23 students; the computer lab classes averaged 18 students and the academic classes averaged 25 students (with a range of 16 to 33).

The Academies began the fall 1982 semester with a total enrollment of 133 students. Table 1 shows the student profile at each Academy by grade at the start of the school year.

Funding. The Academies received funding through two agencies: The Sequoia Union High School District (SUHSD) and the Stanford Midpeninsula Urban Coalition. Income sources for SUHSD were district funds, ESAA/ECIA

Table 1

PENINSULA ACADEMIES

Student Profile - September 1982

Electronic Academy

	10th Grade		11th Grade	
TOTAL Students	39 Students		22 Students	
	Total	Percent	Total	Percent
SEX				
Male	27	69%	14	64%
Female	12	31%	8	36%
ETHNIC				
Black	14	36%	4	18%
Hispanic	6	15%	6	27%
Pacific Islanders			2	9%
East Indian				
Filipino	1	3%	1	5%
American Indian	1	3%		
White	17	44%	9	41%
Total Minority	22	56%	13	59%

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Computer Academy

	10th Grade		11th Grade	
TOTAL Students	41 Students		31 Students	
	Total	Percent	Total	Percent
SEX				
Male	18	44%	14	45%
Female	23	56%	17	55%
ETHNIC				
Black	18	44%	22	71%
Hispanic	4	10%	1	3%
Pacific Islanders	4	10%		
East Indian	1	2%		
Filipino				
White	14	34%	8	26%
Total Minority	27	66%	23	74%

Chapter 2, and Vocational Education Act Limited English Proficiency/Disadvantaged funds. Funding sources for the Coalition were private foundation grants and donations from corporations. During fiscal year 1 July 1982 - 30 June 1983, the total combined Academies budget was approximately $231,422 (projected on May 1, 1982). The average incremental per student cost of the program (i.e., its cost over and above the normal SUHSD average per student costs) was approximately $1,850.

Scope of the Report

Two types of data are included in this report: extant data and survey data. Chapter II summarizes extant data, that is, data routinely collected during the school year by the schools or the Academies. These include student attendance, grades, proficiency test pass rates, and attrition.

Two kinds of comparisons are made using extant data on attendance, proficiency test scores, grades, and attrition. First, using data collected by the Academies and the district, we compare Academy students with all students in their schools or in the district. These comparisons must be viewed cautiously because the Academy students tend to come from economically disadvantaged and/or minority communities and to have had below average basic skills test scores and attendance records prior to joining the program. Second, we compare Academy students with a matched control group of non-Academy students enrolled throughout SUHSD. These students were selected to resemble Academy students as closely as possible on grade level, feeder school attended, 9th grade reading and math achievement test scores, sex, and ethnicity. At the 10th grade level, 72 (91%) students who were enrolled in the Academy in fall 1982 are compared with 72 non-Academy control group students. (Six Academy students were not included in the comparisons because their ninth grade achievement scores were missing, and therefore no "matching" students could be selected.) At the 11th grade level, we selected a random sample of 20 Academy students and matched them with 20 non-Academy students. The original idea of including all the 11th graders in the comparisons was not implemented because it was impossible to find a sufficiently large comparison group of 11th graders with similar characteristics who were still enrolled in the school district.

Chapter III contains survey data collected at the end of the 1983 school year. The survey consisted of a questionnaire completed by all Academy students and structured interviews with parents, school and Coalition personnel, private sector representatives, and students who dropped from the program prior to the end of this school year.

A few notes on the data presented in the report are needed.

- Some of the data in Chapters II and III were collected for only those Academy students who completed the school year as Academy students, e.g., did not drop out of the program mid-year. These data include the proficiency test pass rates by grade level and the survey data from the student questionnaire. Monthly attendance data include students who were eventually dropped only up to the month in which they dropped.

- All percentages have been rounded to the nearest whole percent, which occasionally results in the totals not adding to 100%.

- For the most part, data are presented for both Academies and grade levels combined, rather than on an Academy or grade level basis. This is done because we wish to present an Academy-wide picture and to avoid inappropriate distinctions or comparisons between the various groups, and also because results for the two Academies and grade levels were generally similar. Where marked differences between the groups emerged and where information on these differences would be useful for program planning, we have reported results separately.

- Comparisons between findings from the first and second years of the program are, with a few exceptions, not made in this report. Readers who wish to compare details of the first two years are referred to the First Yearly Interim Report, July 1, 1982. Comparisons in trends are reserved for next year's final evaluation report

Finally, the goals and objectives of the Peninsula Academies are shown in Figure 1. Reporting on the attainment of some of these objectives was not within the scope of this report. These include program management activities, such as fund raising, presentations to educational and business associations interested in replicating the program in other districts, and efforts to assure the continuation and institutionalization of the Academies program in the SUHSD. Nor does the report include a description of some

Program Goals

1. To serve an educationally disadvantaged and largely minority population of students who may not be succeeding in traditional school programs, may drop out, and who lack employable skills.

2. To meet the vocational training needs of such students for skilled and semi-skilled positions with local companies, and to partially satisfy the needs of employers for employees in the selected fields of training.

3. To confront the problem of youth unemployment among the target population, and to establish a model (including a transferable curriculum and developmental process) of possible use in other schools, districts, and localities.

Program Objectives

Students

1. To exhibit improved attitudes toward school and learning.

2. To exhibit improved academic performance.

3. To exhibit improved self-esteem.

4. To complete the three-year academies program and develop skills adequate for skilled and semi-skilled positions in electronics or computers in local companies.

5. To gain knowledge of the world of work and skills in choosing a suitable career path.

6. After graduation, to find satisfactory employment and succeed on the job in enroll in a program of postsecondary training.

Parents

1. To be knowledgeable of the Peninsula Academies program and its objectives and requirements.

2. To support their children in the decision of whether to enter the program, and if they choose to participate, in their efforts in completing the program.

3. To assist the teachers in dealing with behavior/motivation problems which may occur.

4. To provide support to various other program activities.

School Personnel (Teachers, Counselors, and Administrators)

1. To contribute to the planning and definition of the program (all three groups).

2. To provide the necessary facilities for the academies (administrators).

3. To provide an effective curriculum for each of the academies, inconjunction with industry and the Coalition (teachers).

Figure 1. Peninsula Academies Program Goals and Objectives.

Figure 1 continued

4. To provide academic instruction for the program, related to the vocational instruction, that will improve basic skills such as reading and math, and that will meet the district's proficiency objectives in English, math, and science (teachers).

5. To provide students with the needed career guidance (counselors).

6. To provide the necessary high-level support for the program within the schools and district and contribute to the program's long-term stability (administrators).

Private Sector Representatives

1. To contribute to the planning and definition of the program, including effective vocational curricula, to ensure that graduates will receive appropriate training for their beginning positions.

2. To contribute financial resources to the program.

3. To provide the necessary industrial instructors for the program.

4. To help provide the necessary equipment and materials for the program.

5. To provide on-site training opportunities for program participants.

6. To provide employment for program graduates.

7. To exhibit knowledge of and support for the progrm to others, expand the private sector participation in the program, and promote the long-term stability of the program.

Coalition Staff

1. To provide the necessary organization to plan and develop the program, and the necessary management and support to maintain it.

2. To obtain from industry those contributons necessary for the development and ongoing support of the program.

3. To obtain from the schools those contributions necessary for the development and ongoing support of the program.

4. To bring together industry and the schools into a working partnership, and foster the institutionalization of this partnership and the program.

5. To ensure the presence in the program of basic defining elements such as the integration of academic and vocational instruction, individualization of instruction, motivational components, and career counseling.

6. To develop and use an effective monitoring and feedback system for the program (in conjunction with the schools).

program activities, such as outreach to parents, the mentor program (except as included in the private sector survey), and the summer jobs program. Final assessment of the success of the Peninsula Academies must wait until the program has completed its initial three-year cycle, and the first students have graduated and gone on to use their skills on the job or in post-secondary education.

II. Extant Data

The Academies' student objectives include:

- to exhibit improved academic performance, and
- to complete the three-year Academies program and develop skills adequate for skilled and semi-skilled positions in electronics and computers in local companies.

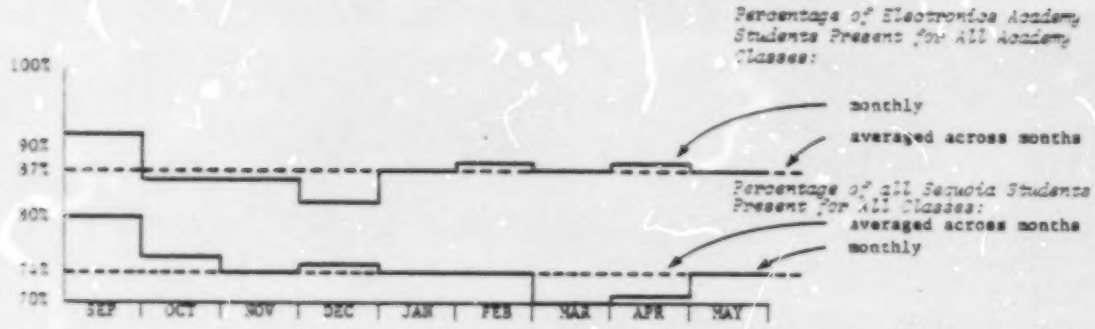
Attendance, course grades, performance on proficiency tests, and attrition rates are four measures of progress toward these objectives.

Attendance

Comparing attendance rates between Academy and non-Academy students is one way to measure the success of the program in motivating students to participate fully in their own schooling. In this section we compare the 1982-83 school year attendance of Academy students and other students in the SUHSD. In one set of comparisons, we present month-by-month attendance rates of Electronics and Computer Academy students and all other students in their respective high schools. In a second set of comparisons we use district attendance records to compare Academy students with a matched group of non-Academy students.

The graphs in Figure 2 show the average percentage each month of Academy students present for all Academy classes and of other students present for all regular classes at Sequoia and Menlo-Atherton High Schools. In other words, the figures represent the average percentage of students who were NOT absent for one or more periods each day, for any reason. These figures include excused and warranted absenses as well as unexcused absenses, or "cuts," and for this reason the absence rate appears higher than that in Table 2. The school-wide figures were calculated by the SUHSD; the Academy figures were calculated by AIR from data supplied by Academy English, mathematics, science, computer, and electronics teachers. The graphs should be read with the following provisions in mind:

Comparison of Attendance Rates Between Electronics Academy Students and All Students at Sequoia High School, 1982-83 School Year



Comparison of Attendance Rates Between Computer Academy Students and All Students at Menlo-Atherton High School, 1982-83 School Year

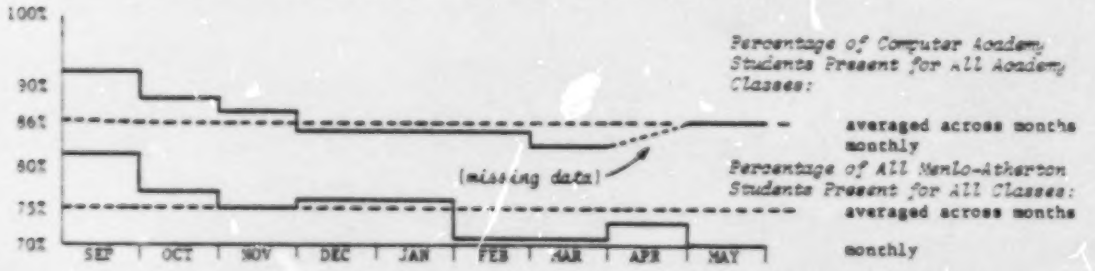


Figure 2. Comparison of attendance rates.

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- Academy students, who tend to be "high risk" students with a history of poorer than average attendance and achievement, are being compared with the student bodies at large at each school.

- Tenth and eleventh grade Academy students are being compared with students in all four grades at their respective schools.

- Absenses from four Academy classes are being compared with absenses from all classes (usually six periods) for the other students.

- Academy students who drop out of the program are not included in the Academy attendance figures after the month in which they drop.

Table 2 compares the average number of days in the 1982-1983 school year with one or more periods "cut" for the Academies group and the matched control groups of non-Academies students.

Table 2

Average Number of Days Enrolled and Average Number and Percent of Cut Days* per Student: Academy and Non-Academy Students (1982-83)

	Average Number of Days Enrolled	Average Number of Cut Days	Average Percentage of Days with Cuts
Grade 10			
Academy (N=72)	170	25	15%
Non-Academy (N=72)	164	38	23%
Grade 11			
Academy (N=20)	166	29	18%
Non-Academy (N=20)	163	33	20%

*Includes Partial Cuts, Full Cuts, and Uncleared, Unexcused, or Partially Unexcused Absences and "Suspended" days

These figures may underestimate the attendance rates for Academies students, because attendance in regular classes is counted for former Academies students who were dropped from the program mid-year. Nevertheless, Academy students at both grade levels show a lower rate of cut days than non-Academy students; for the 10th graders, the difference between the groups approaches statistical significance ($p < .15$).

Grades

We calculated the grade point averages for the fall and spring semesters of the 1982-83 school year Academy and non-Academy control group students. Table 3 shows the mean grade point averages (GPAs), fall and spring, for each group by grade. The GPAs are calculated by weighting grades by course credits. The Academies group's mean GPAs are higher in every instance. These differences are not statistically significant, although they approach significance for the 10th graders ($p < .15$).

Table 3 also shows the average number of "No Credits" (NCs) received by each group. Students who do not satisfactorily complete a course are given a mark of NC and receive no units for the course. Thus, while a NC may often be the equivalent of an F grade, it is not be calculated into a weighted GPA. (For example, a student might complete one 5-unit course with a grade of B and receive four NCs; another student might complete five 5-unit courses with Bs in all classes: both students would have a GPA of 3, or a B average.) Table 3 shows that both 10th and 11th grade Academies students averaged fewer NCs both semesters than their non-Academy counterparts. For the 10th graders in the fall semester, the difference in the mean number of NCs between the groups is highly significant ($p < .005$).

Table 3

Mean Grade Point Averages* and Mean Number of No Credits
Academy and Non-Academy Students
Fall and Spring Semesters, 1982-83

	Fall 1982-83		Spring 1983	
	Mean GPA	Mean Number NCs	Mean GPA	Mean Number NCs
Grade 10				
Academy (N=69)	2.30	.52	2.41	.87
Non-Academy (N=64)	2.24	1.16	2.23	1.06
Grade 11				
Academy (N=19)	2.18	.74	2.19	.89
Non-Academy (N=16)	2.12	1.25	1.96	.94

*A=4, B=3, C=2, D=1

Proficiency Tests

Academy students are expected to acquire academic as well as technical skills and, of course, to graduate from high school. In order to graduate in the SHUSD, a student must pass district proficiency tests in reading, writing, and mathematics.* The pass rates and scores for Academy students on these tests are two measures of the success of the academic component of the Academies program.

Table 4 shows the pass rates on the reading, writing, and math proficiency tests for students in the two Academies, along with the pass rates for each high school's 10th and 11th grade classes as a whole.

Table 4

Percent of Students Passing District Proficiency Tests in Reading, Writing, and Math, Peninsula Academist Students and All Students at Menlo-Atherton or Sequoia High School, 1982-83*

	Menlo-Atherton High School				Sequoia High School			
	Computer Academy		All Students		Electronics Academy		All Students	
	10th Grade	11th Grade	10th Grade	11th Grade	10th Grade	11th Grade	10th Grade	11th Grade
Reading	51%	77%	67%	85%	66%	(95%)	69%	83%
Writing	56%	69%	66%	79%	(87%)	(89%)	62%	76%
Math	46%	73%	58%	75%	(74%)	(95%)	61%	77%

* Instances where Academy pass rates are higher than the school average are circled.

Tables 5, 6, and 7 show proficiency test data for the matched groups of Academies and non-Academies students. (Not all of the non-Academy 10th grade comparison group students had taken the proficiency tests, which accounts for the Ns being smaller for this group.) In all cases, the Academies students' average scores and their pass rates are higher than those for the non-Academies students. For the writing proficiency test, 10th

*Starting with the class of 1985, students will also need to pass proficiency tests in science.

grade, the higher mean score and the higher pass rate for Academies students are statistically significant ($p < .025$ and $p < .02$ respectively). The higher pass rates on the reading proficiency test for both 10th and 11th grades are also statistically significant (at the $p < .05$ level).

Table 5

Math Proficiency Test Results

	Mean	Median	Standard Deviation	N/% Passed
Grade 10				
Academy (N=72)	77.1	83.0	16.0	40/56%
Non-Academy (N=67)	72.7	78.0	19.8	31/46%
Grade 11				
Academy (N=20)	76.4	83.0	18.6	13/65%
Non-Academy (N=19)	75.9	83.0	18.1	11/58%

Table 6

Writing Proficiency Test Results

	Mean	Median	Standard Deviation	N/% Passed
Grade 10				
Academy (N=72)	70.9	71.0	10.4	47/65%
Non-Academy (N=68)	68.3	67.0	13.6	29/43%
Grade 11				
Academy (N=20)	72.1	71.0	10.8	15/75%
Non-Academy (N=20)	67.7	70.0	13.7	8/40%

Table 7

Reading Proficiency Test Results

	Mean	Median	Standard Deviation	N/% Passed
Grade 10				
Academy (N=72	78.0	82.0	38.2	44/61%
Non-Academy (N=72)	70.0	78.0	36.9	33/46%
Grade 11				
Academy (N=20)	80.0	83.0	39.4	17/85%
Non-Academy (N=20)	75.0	77.0	35.3	10/50%

Attrition

Since one objective of the Academies is for students to complete the entire three-year program, a look at student attrition rates must be part of any assessment of the program. In this section we report on numbers and percentages of Academies students who dropped out of the program and who dropped out of school altogether, and comparisons are made with dropout rates for non-Academy students.

Table 8 shows attrition from the Academies during the 1982-83 school year. Of the 133 students who entered the program in fall 1982,* 103 (77%) completed the school year in good standing and were re-admitted to the Academies for the 1983-84 school year. (Four additional students entered the program mid-year.) Most of the drops occurred at the end of the fall 1982 semester, when 20 students dropped out of the Academies: 5 left the program at their own request, and 15 were dropped by the Academies for generally unsatisfactory performance. By the end of the spring 1983 semester, an additional 10 students had left the program; 2 of them requested to leave and 8 were told they could not return to the program in the upcoming school year.

Table 9 shows attrition rates for both Academies for 1981-82 and for 1982-83. The attrition rate is considerably lower this year than last. Moreover, last year many students dropped at their own request and many dropped very early in the fall semester, while this year, 77% of the drops were not at student request, and most took place toward the end of the fall semester.

*A total of 143 students were admitted to the Academies in the fall; 10 of them either moved out of the district or changed their academic plans during the summer.

Table 8

Peninsula Academies Attrition, 1982-83 School Year

Academies	Electronics Academy (1a) Admitted for Fall 1982	(2a) Enrolled for Fall 1982	(3a) Dropped as of June 1983	(4a) (3a) as % of (2a)	Computer Academy (1b) Admitted for Fall 1982	(2b) Enrolled for Fall 1982	(3b) Dropped as of June 1983	(4b) (3b) as % of (2b)	Combined Academies (1c) Admitted for Fall 1982	(2c) Enrolled for Fall 1982	(3c) Dropped as of June 1983	(4c) (3c) as % of (2c)
Grades												
Grade 10	45	39	12	31%	42	41	9	20%	87	80	20	25%
Grade 11	22	22	4	18%	34	31	6	19%	56	53	10	19%
Both Grades	67	61	16	26%	76	72	14	19%	143	133	30	23%

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Table 9

Peninsula Academies Attrition, 1981-82 and 1982-83

	Percent Dropping Out of Program 1981-82	1982-83
Computer Academy	26%	21%
Electronics Academy	49%	26%
Combined Academies	37%	23%

Table 10 compares the number and percent of Academy and non-Academy control group 10th grade students who dropped out of school during the 1982-83 school year. (These figures do not include students who transferred to other schools.)

Table 10

Comparison of 10th Grade Students Dropping Out of School, 1982-83

	Number Entering Fall 1982	Dropped Out of School Number	Percent
Academy sample	72	1	1%
Non-Academy sample	72	6	8%

The information presented in this section on student attrition should be considered with the understanding that it would be unrealistic for the Academies to expect a 100% completion rate, and indeed, this is not a stated goal of the program. Among the factors that affect student attrition are:

- Students move out of the district.
- Students are young (generally 15 years old) when they enter the program, and their career interests and goals are still evolving. It would be unrealistic to expect their career goals to have completely matured or to be unaffected by the exposure to career information offered by the Academies.
- While the Academies teachers and counselors follow a procedure of special individual counseling for students whose performance is unsatisfactory, they retain the option of dropping unmotivated students in order to keep up the prestige and quality of the program for the majority of the Academies' students.

In Chapter III we report on a survey of dropped students that presents their reasons for leaving or losing interest in the program.

III. Survey Data

Survey data were collected from students, parents, school personnel and private sector representatives. Questionnaires and interview guides were designed to measure the following Academy objectives, as set forth in Chapter I, Figure 1: student objectives 1, 3, and 5; parent objectives 1 through 4; school personnel objectives 1 through 7; private sector objectives 1 and 7; and coalition objectives 1, 4, 5, and 6.

Students

To obtain information on student reactions to the Academies program, AIR staff administered a questionnaire to 109 Academies students, or 93% of those enrolled for the spring 1983 semester. (The remaining eight students were absent on the days the questionnaire was administered.) The instrument was the same 23-item questionnaire developed and used for the 1982 student survey. It was administered during the Academies lab classes; the administrator stressed to the students the confidentiality of their responses and then read the instrument aloud item by item, answering any questions that arose as the students marked their responses.

In the summary that follows, we have for the most part combined responses from both grades and both Academies.

Students were asked to rate their general response to the program; 75% liked it better than their schools' regular program:

	Much Better	Slightly Better	About The Same	Slightly Worse	Much Worse
Overall, compared to the regular program, how well have you liked the Academy program?	46 (42%)	36 (33%)	15 (14%)	10 (9%)	1 (1%)

Two questionnaire items related to improvements in student attitudes toward school and learning and toward themselves--their own self-esteem. In both these areas, student responses were predominantly positive:

	Strongly Increased	Slightly Increased	No Effect	Slightly Decreased	Strongly Decreased
Has the Peninsula Academies program influenced your feelings about school and learning, (for example, your desire to study, your grades, your attendance, etc.)	44 (40%)	47 (43%)	13 (12%)	2 (2%)	2 (2%)

	Feel Much Better	Feel a Little Better	No Effect	Feel a Little Worse	Feel Much Worse
Has the Peninsula Academies program caused you to feel differently about yourself (for example, your confidence about school, your friends, your future, etc.)	49 (45%)	42 (38%)	14 (13%)	4 (4%)	— --

The figures regarding feelings about school and learning are less positive than in the 1982 student survey, when "strongly increased" or "slightly increased" responses were reported by 95% of the students compared to 83% this year. However, the Academies' influence on student self-esteem has remained constant, with 82% in 1982 and 83% this year reporting feeling "much" or "a little" better about themselves.

Students are allowed to transfer from other SUHSD schools to attend one or the other of the Academies. This year, 38 students (35%) reported having transferred from another district high school to participate in the program. These transfer students were asked if they liked the change in schools, with the following response:

	Like It	No Opinion	Don't Like It	No Response
Total (N=38)	12/32%	14/37%	11/29%	1/2%
Computer Academy	6/26%	7/30%	10/43%	--
Electronics Academy	6/40%	9/47%	1/7%	1/7%

We also asked the students how they liked the way the Academy schedule and classes fit into their regular high school program. The responses, which were virtually the same at both Academies, were as follows:

Like It	No Opinion	Don't Like It	No Response
47/43%	44/40%	12/15%	2/2%

Three other program components about which students were asked were: (1) inclusion of career-related enrichment activities, such as field trips, speakers from industry, and classroom discussions about careers; (2) individual instruction for those needing it; and (3) interrelated academic and technical lab curricula. We asked students how often activities in these three areas had occurred during the 1982-83 school year. Because the results from the last two questions were significantly different at the two Academies, we have reported the responses separately as well as combined:

	At least once a week	Once or twice a month	Once or twice a semester	Once or twice a year	Not at all	No Response
How often have you had activities that are different from your regular lessons (examples were provided)?						
Electronics Academy	1/2%	24/52%	17/37%	--	2/4%	2/4%
Computer Academy	4/6%	20/32%	23/37%	14/22%	1/2%	1/2%
Total Combined	5/5%	44/40%	40/37%	14/13%	3/3%	3/3%
How often have you received individual instruction in your Academy classes (examples were provided)?						
Electronics Academy	21/46%	15/33%	4/9%	--	6/13%	--
Computer Academy	19/30%	11/17%	10/16%	--	23/37%	--
Total Combined	40/37%	26/24%	14/13%	--	29/27%	--
How often have your Academy academic classes taught you things directly related to your lab classes?						
Electronics Academy	30/68%	4/9%	9/20%	--	2/4%	1/2%
Computer Academy	10/16%	14/22%	26/41%	--	13/21%	--
Total Combined	40/37%	18/17%	35/32%	--	15/14%	1/1%

In comparing these responses with those from last year, we find that responses to the question on enrichment activities are virtually the same; but for the other two questions, a significant increase has occurred in the top two response categories. For "individual attention," 47% reported having such attention "once a week" or "once or twice a month" in 1982, and 61% this year. For "interrelated instruction," 43% reported in the top two frequency categories in 1982, and 54% this year. The increases appear to be mainly due to gains at the Electronics Academy.

Another objective of the Academies is to provide counseling for program participants, to give either individual or group help regarding school, personal, or career concerns. This was the first year that the Academies had their "own" counselors, and the effect of this can be seen in the positive response to this item:

	Yes	No	Don't Know
Did you have program-related counseling available to you in the last year?	80/73%	19/17%	10/9%

Last year 63% of the students responded "yes" to this item.

Students who answered "yes" to the above question were asked to estimate how often they had individual counseling during the school year. Based on these estimates, and assigning "zero" visits to the students who responded "no" to the original question, we made a rough calculation that the 10th graders made an average of 2.2 visits to the counselor per year (with a range of 0 to 16), and the 11th graders averaged 4.9 visits per year (with a range of 0 to 32 visits). Of those 80 students who reported visiting the counselor, 84% said they found the counseling helpful, 10% said it was not helpful, and the remainder were not sure.

Another Academy objective is to enhance students' awareness of careers and help them formulate career goals while still in high school. Students were asked about their plans after graduating from high school. Responses to these questions for 10th and 11th graders were similar and are reported together here:

	Yes	No	Don't Know or No Response
Do you have specific plans for what to do after you graduate?	93/85%	16/15%	--
If yes, do you expect to be able to use your Peninsula Academy training in this activity?	84/90%	7/8%	2/2%
Do you know what kind of career you want?	87/80%	22/20%	--

Several questionnaire items asked students to rate various aspects of the program, with the following results:

	Excellent	Good	Average	Poor	Terrible	No Response
How would you rate the quality of the:						
Facilities	11/10%	46/42%	45/41%	5/5%	2/2%	--
Equipment	17/16%	43/39%	32/29%	14/13%	3/3%	--
Books or Other Learning Materials	27/25%	45/41%	29/27%	5/5%	2/2%	1/1%
Lab Instruction	21/19%	36/33%	32/29%	15/14%	5/5%	--
Academic Instruction:						
English	59/54%	34/31%	13/12%	3/3%	--	--
Math	30/28%	27/25%	27/25%	7/6%	5/5%	13/12%
Science	36/33%	24/22%	18/17%	7/6%	7/6%	17/16%
Overall	24/22%	48/44%	32/29%	3/3%	1/1%	1/1%

Finally, students were asked to describe their most positive experience and their biggest problem this school year related to the Academy program. Ninety-one students (83%) listed at least one positive experience. The most frequently mentioned types of experiences were:

- Learning technical skills and learning how to use the lab equipment (30)
- Personal improvement, including increased self-confidence, better interactions with peers, learning more and enjoying school, getting better grades, improving attendance, and improving study habits (26)
- Experiencing field trips, outside speakers, and the mentor program (19)
- Having good interactions with teachers and counselors (15)
- Having career-related experiences, such as making plans for summer jobs, learning to complete job applications, and learning about careers (13)
- Having good classes in general (9)

Eighty-seven students (80%) listed at least one problem related to the Academies this year. The following kinds of problems were listed:

- Problems with teachers, counselors, or Coalition staff, including getting along with teachers and dealing with a mid-year change in instructors (33)
- Problems with classwork, including finding classes too difficult, too fast-moving, or too easy, and having difficulty learning certain specific skills or concepts (26)
- Personal problems, such as poor attendance, poor study habits, poor grades, bad interactions with fellow students (19)
- Problems related to classroom instruction, such as needing more individual help, having disorganized or undisciplined classes, not being allowed to use lab equipment, or having too much homework (14)
- Problems related to the Academy schedule, such as not being able to take certain non-Academy classes, having the same students in all classes, or worrying about whether the program will meet college prerequisites (10)

- Miscellaneous problems, including theft from the lab, unsatisfactory lab equipment, and transportation to and from school (3)

To summarize responses to the student survey, the large majority of students appear to be positive about the program. They like the overall program, and they rate their teachers, the equipment, and the facilities highly. They are enthusiastic about the technical skills they are learning, about the personal growth they have experienced, and about the opportunities the program gives them to learn first-hand what is happening in industry. The students also report positive interactions with their Academy teachers and counselors.

The results of last year's student survey suggested that improvements were needed in English and lab instruction, in individualized instruction, in the linking of lab and academic instruction, and in the counseling component. This year, students rate all instruction highly, especially English. However, as was the case last year, room for improvement still exists regarding the provision of individual instructional attention. The picture is improved over last year in this area, and yet 27% of the students still said they had received no such assistance. The interpretation could be made that the students did not seek individual help that was available; however, if students responded accurately to the question as asked, their response suggests that they did not feel that individual assistance was actively offered. Another area that still appears to need attention is the interrelation of academic and lab curricula, especially at the Computer Academy. The Electronics Academy showed great improvement in this area over last year.

On the positive side, students are receiving more frequent individual counseling attention this year and find it useful. Many also report having experienced special enrichment activities at least once or twice a month. Nearly all the students say they have formulated specific career plans and to expect their Academy training to be useful to them in these careers.

Finally, although 43% of the student respondents approved of the overall Academies schedule, some students (about 15%) were unhappy with the

restrictive aspect of the program, which does not allow them much freedom in selecting non-Academy electives. In addition, only 32% of the students who changed schools to be in the Academy liked their new schools, and 29% do not like the change. Special orientation activities may be indicated for these students, to assure that the program as implemented meets their expectations.

Parents

Recognizing the strong relationship between student achievement and parental support, the Academies staff consider parent involvement to be an important component of the program.

We surveyed a sample of parents, selecting them on the basis of a stratification procedure to ensure representation across Academies, grade levels, sex, ethnicity, and academic achievement. Thirty parents were selected, and we were able to contact 25 and to interview 24 (80%) of the parents in the sample. (One parent declined the interview because her child had dropped out of the program she felt out of touch with the Academy.) A 12-item telephone interview guide was used. The profile of respondents is shown in Table 11.

Table 11

Respondents to Parent Telephone Survey

	Selected (N=30)	Interviewed (N=24)	Response Percentage
Electronics Academy	13	10	77%
Computer Academy	17	14	82%
Male	15	13	86%
Female	15	11	73%
Ethnicity			
White	7	6	86%
Black	11	9	82%
Asian/Pacific Island	4	3	75%
Hispanic	6	4	67%
Other	2	2	100%
Above Academy average grades	16	13	81%
Below Academy average grades	14	11	79%

We asked parents to give us a general rating of the program using a five-point scale from "excellent" to "terrible." Eleven parents (46%) rated the program as excellent; 12 (50%) as good; and 1 (4%) could not give a rating.

To explore parents' general understanding of the program, we asked a series of questions about program components, and on the basis of their responses, deterned whether or not they were knowledgeable about each:

	Yes	No	Not Clear
Parents knowledgeable of:			
How program differs from the regular high school program	12/50%	12/50%	---
The program's basic purpose	11/46%	11/46%	2/8%
How the class schedule differs	9/38%	13/54%	2/8%
The length of the program	15/63%	8/33%	1/4%
Basic content of lab instruction	6/25%	17/71%	1/4%

It appears from these results that parents are most knowledgeable about the length of the program (3 years) and least knowledgeable about the basic content of the lab instruction; but, overall, about half of the parents are uninformed or misinformed about any given aspect of the Academies.

We were also interested in th parents' opinions on the quality of the facilities, equipment, materials, and instruction. We asked parents to rate these components on a five-point scale:

	Excellent	Good	Average	Poor	Terrible	Don't Know
Facilities	2/8%	9/37%	1/4%	--	--	12/50%
Equipment	3/13%	8/33%	1/4%	--	--	12/50%
Books & learning materials	2/8%	7/29%	4/17%	--	--	11/46%
Instruction in:						
English	6/25%	7/29%	1/4%	--	--	10/42%
Math	2/8%	12/50%	1/4%	--	--	9/37%
Science	1/4%	10/42%	3/13%	--	--	10/42%
Electronics or Computer Lab	2/8%	9/37%	1/4%	--	--	12/50%

Corroborating the finding that many parents are not knowledgeable about the Academies as a whole, almost half of the parents said they did not feel familiar enough with the program to rate the facilities, equipment, materials, and/or instruction.

We also asked parents about their contact or communications with the Academies' staff:

	Very Well	Moderately Well	Poorly/ Not at All	No Response
How well does the Academy staff keep you informed about your child's progress?	15/63%	2/8%	6/25%	1/4%

	Yes	No	No Response
Do you receive regular communication from the Academy about activities, plans, course-work, etc.?	16/67%	7/29%	1/4%

Parents of 11th grade students were asked for their reactions to the mentor program. The interviewer briefly described this program to remind parents what it was, but even so, 5 out of the 9 parents of 11th graders interviewed (56%) said they were too uncertain or uninformed about the

program to comment. The other 4 (44%) had a favorable reaction to the mentor program.

Another set of questions was designed to tell us more about the ways that parents contribute to the Academy. Parents were asked if, during the past year, they had done any of the following:

	Yes	No	No Response
Helped your child decide whether to enter the program	16/67%	8/33%	—
Helped your child with homework assignments for the program	12/50%	12/50%	—
Had discussions with teachers or counselors in the program	9/37%	15/63%	—
Helped in counseling your child about a program-related problem	12/50%	12/50%	—
Attended any school functions related to the program	15/63%	9/37%	—
Helped with any program-related activities	2/8%	19/79%	3/13%

We were also interested in parents' perceptions of how the program affected their children's attitudes toward school, toward themselves, and toward their career possibilities:

	Strongly Increased	Slightly Increased	No Effect	Strongly Decreased	Slightly Decreased	Don't Know
Student's attitude toward school and learning	15/63%	3/13%	6/25%	--	—	--
Student's self esteem	19/79%	2/8%	3/13%	--	—	--
Student's knowledge of possible careers	14/58%	5/21%	2/8%	--	—	3/13%

In a related question, we asked the parents if they had discussed post-graduation plans with their children, and, if so, if they felt the children were moving satisfactorily toward a career plan. Rsponses showed that 18

(75%) had such discussions, and of these 13 (72%) felt progress was being made.

Finally, parents were asked to comment on the strengths and weaknesses of the program and to offer suggestions for improvements. The majority of parents (71%) could think of no program weaknesses to comment upon, and from those who did comment, no problem area emerged as being of concern to more than one parent. However, the problems that were noted included: not enough special tutoring in math; insufficient hands-on time with computers; lack of emphasis on improving student's oral expression; changing computer teachers mid-year; and not arranging for summer jobs for 10th graders. Parents suggestions for program improvements focused on improving communications between the school staff and themselves, especially by notifying parents earlier when a student has problems in school and offering suggestions for how parents can help their children at home.

Parents praised the program for motivating the students, and for giving them confidence and practical opportunities to move toward career goals. Several parents specifically mentioned the advantage the students were being given to train for a "job with a future."

School Personnel

The people most crucial to the Academies' success are school personnel--teachers, counselors, and administrators. We interviewed 21 of these individuals, including all the Academy academic teachers and lab instructors (13), the program counselors (2), school principals and other administrators (4), the school district's coordinator of special projects (1), and the program coordinator at the Coalition (1). The interview guide consisted of the 29-item instrument used last year, supplemented by two additional items. Most interviews were conducted by telephone and lasted about half an hour.

We asked the school personnel to rate the overall Academies program, first in concept and then as implemented this school year on a scale of one to seven (1=bottom, 7=top). The average rating for the Academies concept was 6.1, and the average rating for this year's implementation was 4.7.

(Last year's average ratings for concept and implementation from 16 school personnel were 6.4 and 4.6, respectively.)

We also asked for ratings of the program's planning and management during this school year.

	Excellent	Good	Average	Poor	Terrible/ Non existent	Don't Know
How effective do you feel the overall program planning and management for the Academies has been?	4/19%	8/38%	5/24%	4/19%	--	--
How effective do you feel the planning and management of the instruction has been for the:						
academic classes:	3/14%	8/38%	3/24%	3/14%	--	4/19%
lab classes:	3/14%	3/14%	10/48%	--	--	5/24%
How would you rate the quality of the monitoring and feedback system for the program?	4/19%	9/43%	2/10%	3/14%	3/14%	--

These ratings are more positive than last year, when 40% rated the overall management as "average" compared to 24% this year, and only 34% rated it "good" or "excellent" compared to 57% this year. Also, last year 43% said monitoring and feedback were "average" compared to 10% this year, and only 28% said they were "good" or "excellent" compared to 62% this year. (Instructional planning ratings were not reported last year.)

In related questions, respondents were asked whom they considered to be mainly responsible for overall program planning and management and for planning and managing the instructional aspects of the program.

With respect to program planning and management, the following responses were obtained.

	N/%
School: administrators, lead teachers, and teachers	19/90%
School district	8/38%
Coalition	7/33%
Private sector	1/5%
Steering Committee/Executive Committee	5/24%
Don't know	1/5%

Twelve respondents named two or more agencies or individuals as sharing management responsibility. Of these, 5 (24%) named a "school district team" consisting of the district program coordinator, the school principals, instructional vice-principals, and the teachers; 4 (19%) said the responsible team consisted of "the school" (including the lead teachers, regular teachers, and school administrators) and the Coalition; 1 (5%) said the Coalition and the school; 1 (5%) said the Coalition and the Steering Committee; and 1 (5%) said a combination of the Coalition, private sector, school district, teacher, and the Steering Committee. Eight respondents named a sole individual or agency as mainly responsible: the lead teacher(s) (4/19%); the Coalition (2/10%); and the Steering Committee (2/10%).

There was better consensus regarding responsibility for planning the instructional aspects of the program. Nine respondents (43%) said the Academies teachers were responsible, six (29%) said the lead teachers; four (19%) named the school administrators, two (10%) said the school district coordinator, and one (5%) said the Coalition. As for the previous item, most respondents named more than one individual or agency as having this responsibility. Several respondents commented that while this year the responsibility for instructional planning has fallen on the teachers, this is not where it belongs. They felt that teachers must remain involved, but that someone else should take primary responsibility for coordinating the instructional planning.

Another item related to program management asked respondents how supportive of the Academies they felt administrators at the school and district levels to be.

	Very Supportive	Somewhat Supportive	Slightly Supportive	Non Supportive	Don't Know
School level	8/38%	6/29%	6/29%	1/5%	—
District level	13/62%	4/19%	1/5%	—	3/24%

According to these responses, the district is more supportive this year than last (81% said very or somewhat supportive this year and 74% last year); but the schools are less supportive (67% this year and 80% last year). One set of questions asked about changes in the level of contact and cooperation between business representatives and the schools and about changes in attitudes toward the private sector.

	Yes	No	Don't Know
Has contact increased?	19/90%	2/10%	—
Has cooperation increased?	19/90%	1/5%	1/5%
Changed attitude toward private sector?	9/43%	11/52%	1/5%

Respondents offered as examples of increased contact and cooperation the mentor program, field trips and speakers from industry in the schools, as well as the summer jobs program, equipment gifts, and loaned instructors.

An important Academies objective is the improvement of student attitudes toward school and toward themselves. Respondents were asked to estimate the percent of students whose attitudes had changed due to the Academies.

	Average Percentage Given		
	Increased	No Change	Decreased
What percent of students in the program have changed their attitudes about school and learning? (N=19)	71%	26%	4%
What percent of students have changed their self-esteem? (N=17)	73%	24%	2%

To assess progress toward the objective of parent support for the program, school personnel were asked how supportive and interested the parents have been of the program.

Very Supportive	Somewhat Supportive	Slightly Supportive	Non Supportive	Don't Know
7/33%	6/29%	4/19%	--	4/19%

School personnel were also asked about three Academies' objectives that deal directly with classroom experience for the students. These are (1) the inclusion of a motivation, enrichment component, such as field trips and speakers; (2) provision of individual attention for instruction; and (3) interrelating or linking the academic and lab instruction.

	More than Once a Week	Once a Week	Once/ Twice a Month	Once/ Twice a Semester	None
During the last year, how frequently have the following taken place? (Examples were given of each)					
Motivational component (N=17)	--	5/29%	10/59%	2/12/%	--
Individual instruction (N=17)	14/82%	2/12%	--	--	1/6%
Linking lab/academic instruction (N=13)	2/15%	1/8%	1/8%	3/23%	6/46%

All but two of the respondents agreed that these activities were very useful when they occurred; the two dissenting respondents seriously questioned the value of attempting to relate the academic curriculum to that of the labs.

This year, the counseling program for the Academies was enhanced by the addition of special counselors. All the school personnel were asked to estimate how frequently the average academy student received individual counseling this school year. Ten respondents said they did not know, but it would probably be "frequently" or "a lot." The other 11 respondents' average estimate was 3 to 4 times per semester. They pointed out that some students never made individual visits to the counselor, while others went

several times a month. The two counselors' estimates of frequency of individual counseling varied. One said the average would be less than one visit per Academy student per semester; the other said the average would be one or two visits a month, or four to eight visits per student per semester. Both counselors have, in addition to offering individual counseling, led special group counseling sessions or classes on behavior adjustment, study skills, and motivation. Both have also made classroom presentations and have had individual parent-student meetings, and one counselor developed and used an attitude assessment instrument designed to make students and teachers aware of areas where attitudinal improvements could be made.

School personnel were asked to rate the quality of facilities, equipment, instructional material, curriculum, and instruction.

	Excellent	Good	Average	Poor	Terrible	Don't Know
How would you rate the quality of the:						
Facilities	4/19%	7/33%	7/33%	3/14%	--	--
Equipment	5/24%	8/38%	2/10%	1/5%	--	5/24%
Books and learning materials	6/28%	11/52%	2/10%	1/5%	--	1/5%
Lab curriculum	1/5%	11/52%	5/24%	--	--	4/19%
Lab instruction	5/24%	7/33%	5/24%	1/5%	--	3/14%
Academic curriculum	5/24%	12/57%	--	--	--	4/19%
Academic instruction	8/38%	8/38%	2/10%	--	--	3/14%

All these ratings were consistently higher than last year. For the most part, the ratings from the personnel interviewed at the two schools were similar. Exceptions were ratings of the lab curricula, where the electronics curriculum was rated as excellent or good by 70%, while the computer curriculum was not rated excellent by anyone and was rated good by 54%. On the other hand, lab instruction at the Computer Academy was rated excellent or good by 69% and average by only 8%, while at the Electronics

Academy, instruction was rated excellent or good 40% and average by 50%. Another difference was that many of the Computer Academy staff responded "Don't Know" to many questions that did not touch directly on their own areas of responsibility, whereas this was seldom the case in the Electronics Academy. This may be because the teaching schedule this year at Menlo Atherton did not allow for common release period for all Academy teachers, thus cutting down on opportunities for Academy staff meetings and interactions.

School personnel were also asked if involvement with the Academies had affected their professional development. Fifteen individuals (71%) responded "yes" and six (29%) said "No." The changes most frequently mentioned were the acquisition of more skills in curriculum development, management and communication, and of new knowledge about industry and about technical fields.

School personnel were also asked to describe the type of student for whom the Academies program is most appropriate. Respondents were not prompted by a description of the Academies' original definition of its target population,* but responded to an open-ended question. Most of those interviewed described the target student in terms of academic skills, attendance record, attitude, and personal background. Regarding academic skills, 33% of the respondents mentioned that the student should be average or slightly below average in this respect, but 10% said the students should have better than average skills; 15% said that very low skills were acceptable; while another 15% said that very low academic skills were not acceptable. Two respondents (10%) said the program should aim for a range of academic ability, but one (5%) expressed the opposite view, saying that better than average students should be excluded.

In terms of attendance, two (10%) respondents specifically mentioned that a good attendance record should be required, one (5%) said that

*The original target population was expected to be primarily disadvantaged, largely minority students with lower-than-average academic achievement test scores, who were considered dropout-prone.

students could be accepted with a poor record, and yet another said poor attendance should disqualify a student. Five respondents (24%) said the target student should be the "potential dropout" but another three (15%) said the opposite: the program should not consider potential dropouts.

Student attitude was the most frequently mentioned factor for selection. Fourteen respondents (67%) said the target student is one who is unmotivated by the regular program—is "drifting" through school. Another three (14%) defined the appropriate student as one who is "disaffected." Six (29%) said, however, that the student should be well-motivated, have high interest in a technical area and in a career, and be a "responsible" student. Three (14%) respondents stressed that the student with behavior problems and a negative attitude does not belong in the program.

Finally, two respondents (10%) mentioned that the student population should be at least half minority; and two mentioned that the students should be "disadvantaged" in terms of potential for contacts with industry, high technology, etc.

It appears that there has been a shift from the originally defined target population toward the student of average skill level who lacks motivation and who may be a "mental dropout" from school, but who does attend class—"put in seat time." Being a member of a minority or a disadvantaged group was not frequently mentioned, but this may be because it is a tacitly accepted aspect of the program.

At the end of each interview, school personnel were asked what they felt were the greatest weaknesses and strengths of the program. The most frequently mentioned weakness was the uncertainty of funding and the related uneasiness about having time for planning and coordination. Closely related was a concern about the lack of sufficient advance curriculum planning, both prior to and during the school year. Other areas of weakness were the lack of orientation, assistance, and general support at the schools for the industry-loaned instructors, and the lack of continuity in the teaching staff from year to year, leading to a lack of staff cohesion and esprit de corps. A variety of other problems were mentioned including poor selection

of students and the related problem of what to do with difficult students; lack of a sense of community among the students and the opposite problem of too much "togetherness" for students; insufficient contact with parents; difficulty of maintaining student enthusiasm for a three-year program; difficulty of meeting the demands of this program without detracting from the regular school program; and the lack of adequate classroom space. In contrast to last year's interview results, where the most prominent weakness mentioned was coordination and communication in overall program planning and management, only two respondents this year mentioned inefficient communication and unclear lines of responsibility as a problem.

School personnel named as the main strengths of the program the cooperation and contact between the business and school communities, the enthusiastic and motivated students, the general Academy model that opens career opportunities to the students, and the dedicated staff. Also mentioned, but less frequently, were small classes, individual attention for students, teamwork and good leadership at the schools, and the increased opportunities for cooperation between the two high schools.

Private Sector Representatives

Involvement of the private sector is essential to the basic concept of the Academies program--business and schools working together to benefit both students and industry. Twenty-seven firms in San Mateo and Santa Clara counties have contributed to the Academies program this year; their participation has entailed providing funding, loaning instructors, donating equipment, sponsoring mentors, hosting field trips, sending speakers to the schools, making summer jobs available, assisting with program promotion and management, and participating on the Steering and Executive Committees.

We interviewed 20 representatives of the private sector: 13 mentors (one of whom was also on the Executive Committee) and 7 other individuals from industry who were heavily involved with the Academies this year. These individuals are employed by nine of the Academies' supporting business firms. The mentors were chosen from the list of 64 active mentors, using a sampling plan designed to select at least one mentor from each contributing

company.* We used the same telephone interview guide employed in the 1982 private sector survey.

One question asked what the respondents perceived as their company's main reason for involvement in the Academies program. Eighteen individuals (90%) mentioned their corporate commitment to community involvement, stemming from concerns about youth unemployment and interest in encouraging youngsters to stay in school. Nine respondents (45%) said their companies had an interest in encouraging young people to enter technical fields, so that there will be a trained work force in the area for potential employment; and three respondents (15%) mentioned that their company was motivated by wanting to improve public relations and strengthen industry's influence on education.

As with the school personnel, we asked for a general rating of the Academies, first in concept and then as implemented this year, using a seven-point scale (1=bottom; 7=top). The average rating for the program in concept was 6.3 (exactly the same as last year's private sector rating); the average rating for the program as implemented was 5.1 (up from 4.0 last year).

Two questions asked if the curricula in the Academies' labs and academic classes provide the students with the skills wanted by area companies. Although eight individuals (40%) said they were not sufficiently familiar with the curricula to comment, eleven respondents (55%) said they felt the lab curriculum would accomplish its objectives, and the same number that the academic curriculum would do so. Only one person (5%) responded "No" to each of these items. Respondents commented that they expected the lab curriculum to turn out informed individuals possessing basic familiarity with the technical equipment, but not full-fledged technicians. They also stressed the importance to industry of basic math, science, and writing/communications skills.

*Ten companies sponsored mentors; we were unable to contact one company's mentors.

One set of questions asked about effectiveness of overall planning and management of the program.

	Excellent	Good	Average	Poor	Terrible/ Non-existent	Don't Know
How effective do you feel overall program planning and management for the Academies has been?						
Mentor respondents	4/31%	4/31%	4/31%	---	---	1/8%
Other respondents	2/29%	3/43%	1/14%	---	---	1/14%
Total combined	6/30%	7/35%	5/25%	---	---	2/10%
How would you rate the quality of the monitoring and feedback system for the program?						
Mentor respondents	2/15%	3/23%	2/15%	3/23%	3/23%	---
Other respondents	2/29%	3/43%	1/14%	---	---	1/14%
Total combined	4/20%	6/30%	3/15%	3/15%	3/15%	1/5%

Respondents were asked who they thought had primary responsibility for overall program planning and management; the variety of responses indicates some confusion on this point, particularly among mentors, five of whom commented that they were unclear as to who was directly responsible, even for the mentor component of the program. Responses were as follows.

	N/%
School: administrators, lead teachers, and teachers	9/45%
School district	2/10%
Coalition	9/45%
Private sector	3/15%
Steering Committee/Executive Committee	6/30%
School counselors	1/5%
Don't know	1/5%

No one agency or individual was named by a majority of respondents as having primary management responsibility. Thirteen individuals named just one group as having primary responsibility, but not all of them named the same group. That is, five people (25%) named the Coalition or the Academies Director at the Coalition; 3 (15%) named the lead teachers; 3 (15%) named the Steering and/or Executive Committee; and 1 each (5%) named the school administrators, and private sector representatives. Five respondents named two groups that share responsibility: the school district and/or lead teachers with the Coalition (3/15%); the school district with the private sector representatives (1/5%); and the lead teachers with the school counselors (1/5%). One individual (5%) said that planning and management responsibility is shared by everyone involved. Although these responses show a lack of consensus in this group as to management responsibility, most private sector respondents included either the Coalition or the Academy teachers and lead teachers among those holding management responsibility.

The mentors were asked to describe their activities with the Academy. On the average, the mentors interviewed each had approximately four contacts with their mentees between November and May, with a range of from one to nine or ten contacts. The following examples were given of mentoring activities:

- Showed mentee work environment (9)
- Visited the classroom or attended school open house (7)
- Met for "personal" relationship (bowling, golf, lunch, shopping, movies, etc.) (4)
- Talked on the telephone about school, jobs, etc. (3)
- Visited mentee at home (2)
- Arranged for an Academy tour of company (2)
- Arranged for mentee to fill out summer job application (1)
- Gave a talk at the school (1)
- Attended an Academy pot luck supper (1)
- Discussed teaching methods with teacher-mentee (1)

To learn more about the private sector's perception of the program's success in bringing the business and school communities closer together, we asked whether the level of contact and cooperation had increased between these groups and whether their own attitudes toward schools and youth had changed due to the Academies.

	Yes	No	Don't Know
Increased contact?	17/85%	2/10%	1/5%
Increased cooperation?	15/75%	1/5%	4/20%
Changed attitude toward schools?	9/45%	11/55%	--
Changed attitude toward target youth?	8/40%	12/60%	--

Most of those who answered "No" to the last two questions said they already were familiar and sympathetic to the problems of schools and of disadvantaged youth. Frequently mentioned as examples of increased contact and cooperation were the mentor program and the Steering and Executive committees. Many interviewees commented that the schools are growing in their awareness of what business needs and that companies are better understanding the possibilities and limits of what schools can accomplish. As one interviewee commented, "Familiarity breeds respect."

The interviews gave us an opportunity to explore how the private sector values Academy activities that are designed to give students exposure to actual work settings prior to high school graduation. Respondents were asked to rate the utility of four ongoing program activities.

	Highly Useful	Somewhat Useful	Not Useful
Field trips to businesses	15/75%	5/25%	--
Business presentations in the schools	8/40%	12/60%	--
The mentor program	17/85%	3/15%	--
Individual interactions between students and company employees (other than mentor program)	12/60%	7/35%	1/5%

It was also of interest to learn private industry's perceptions of the relative importance of factors that might play a role in a decision about whether or not to hire a young high school graduate.

	Very Important	Somewhat Important	Not Important
Previous work experience	1/5%	13/65%	6/30%
Appearance and dress	7/35%	11/55%	2/20%
Language/speech mannerisms	5/25%	12/60%	3/15%
Physical strength and endurance	—	9/45%	11/55%
Academic record	8/40%	10/50%	2/10%
References	7/35%	11/55%	2/10%
Vocational or technical skills	10/50%	9/45%	1/5%
Job motivation and enthusiasm	20/100%	—	—
Dependability	18/90%	1/5%	1/5%*
Ability to get along with others	19/95%	1/5%	—

Finally, private sector representatives were asked to comment on the Academies' major weaknesses and strengths and to make general suggestions for improvements. Responses of the mentors and the others are presented separately here, because mentors' comments dealt primarily with that one component of the program.

All the mentors were positive and enthusiastic about the program and said its greatest strength was giving students a chance to learn about industry first-hand and see the practical relevance of their education. However, many of them had suggestions for improvements in the mentor program. The main areas of weakness they commented on were the lack of communication between the Academy staff and the mentors and the lack of

*The one person who said "dependability" was not important explained this response by saying that while this trait is crucial to keeping a job, there is no way for an interviewer to determine an applicant's dependability in advance.

sharing of information and ideas between mentors. Among the improvements they suggested were: a monthly mentor newsletter with specific examples and suggestions for mentoring activities, feedback from students on most useful activities; personal contact (not form letters) from Academy staff to talk over their activities and encourage greater involvement where necessary; and regular short meetings of small groups of mentors to share ideas. Other mentors suggested greater involvement with teachers (to get feedback on what activities students need and like) and more group activities of mentors and mentees. Some mentors expressed concern about the lack of structure and explicit goals for the mentor program and suggested they be given a written statement of expectations regarding level of involvement.

In discussing the weaknesses of the program with the non-mentors in this group, we found the most frequently mentioned concern to be the degree of continued industry commitment and involvement in the program. This included concerns about the school district's financial expectations from industry, about irregular attendance of industry representatives at the Steering and Executive Committee meetings, and about making the program a permanent part of the district's offerings. Also mentioned were problems of financial planning, the need to tighten up and document the technical curriculum, the instability of the loaned instructor model, and the lack of communication between the Academies and other industry-school programs around the country.

Most private sector representatives agreed that the greatest strengths of the program were the enthusiasm and motivation of the personnel. Also mentioned as strengths were the mentor program, the overall positive effect on the students, and the Academies model in general.

Dropouts

Of the 133 students who entered the Academies in fall 1982, 30 (23%) left the program between September 1982 and June 1983. Of these 30 students, 23 (77%) were dropped by the Academies for poor performance and/or attendance; 6 (20%) left at their own request; and 1 (3%) transferred out of the district. We conducted interviews with 23 of the 30 exiting students.

Table 12 shows the characteristics of the students interviewed. Interviews were conducted by telephone and lasted about 10 minutes, following a six item interview guide.

Table 12

Dropout Interview Respondent Profile
February and June 1983 (N=23)

	Computer Academy	Electronics Academy	Total
Class			
10th	5	12	17
11th	3	3	6
Sex			
Male	4	11	15
Female	4	4	8
Drop Status			
Student Request	2	4	6
Academy Request	6	11	17
TOTAL	8	15	23

We asked students their main reason for leaving the Academies program. The six students who left the Academies voluntarily gave the following reasons for their decisions:

- changed career interests (2)
- wanted more intensive college prep courses (2)
- wanted to join the Army (1)
- felt disappointed in the lab curriculum (1)
- did not receive extra help needed and expected (1)

For the 18 students interviewed who were dropped by the Academies, the main reasons for leaving were:

- classes were difficult--got low grades (7)
- did not attend classes regularly (4)
- disliked the lab curriculum (2)

- had insufficient credits to graduate (1)
- did not receive extra help needed and expected (1)
- disliked science (1)
- lost interest in the career (1)

Two students said they did not know why they were dropped and that they had no reason to leave.

We also read the students a list of 17 possible reasons for dropping and asked if any of these reasons had been true for them.

	Yes	No	Partly
Program was too hard	4/17%	18/78%	1/4%
Program was too easy	2/9%	21/91%	
Disliked the subject	7/30%	14/61%	2/4%
Disliked the teacher(s)	5/22%	16/70%	2/8%
Disliked other students	1/4%	21/91%	1/4%
Disliked changing schools	2/8%	21/91%	
Disliked the schedule	7/30%	16/69%	
Disliked the facilities	3/13%	20/87%	
*Disliked how lab was taught	15/65%	8/35%	
Disliked how academic subjects were taught	3/13%	15/65%	6/26%
Problems with homework	10/43%	10/43%	3/13%
*Problems with grades	15/65%	8/35%	
Behavior/attendance problems	9/39%	13/56%	1/4%
Personal problems		23/100%	
Interest in other activities	8/35%	15/65%	
*Missed the regular classes	13/57%	10/43%	
Missed my friends	5/22%	18/78%	

We asked the students what, if anything, they really liked about the Academies program. Three students said there was nothing they liked, but the other 20 named a variety of things. Most frequently mentioned were: the opportunity to work with the lab equipment, going on field trips, and having supportive teachers who care. Students also liked the "fun" classes and friendly atmosphere where they know all the students in the class, the two-hour lab schedule and inter-related classes, the chance to meet people from industry and get training for a good job, and the special privileges for Academy students.

*The factors where over half the respondents gave "yes" responses.

Finally, we asked the students how they would improve the program. The most frequent suggestions were to provide better explanations of the technical material and to give more hands-on experience with the equipment and less book work in the lab classes. Other suggestions related to the lab curriculum and instruction were to teach more computer programming, purchase more varied computer software, emphasize practical knowledge (not theory and history), purchase more modern electronics equipment, and have stricter discipline in the labs. More general suggestions were to provide for more tutoring for academic classes, and allow students more flexibility to take non-Academy courses.

Interviews with dropouts can be expected to give a somewhat slanted view of a program but nevertheless can give insight into possible problem areas. Eight of the 23 students interviewed said they had lost interest in electronics/computers as a career, and thus their motivation to work hard in the program had deteriorated. Other students were unhappy with the way the labs were taught, saying the teachers "made the subject boring," stressed book work over manual work, or taught over their heads. This may be an indication that the industry-loaned instructors in the labs need more help in teaching methodology, or that the instructional approach needs to be re-examined. Some students mentioned problems with either math, science, or both. They found these subjects difficult and discouraging, which may mean that the extra tutoring help they needed was not available. Finally, six of the 23 students commented that the Academies program was not what they expected it to be when they signed up. This may indicate that students need to be given more information during the recruitment and selection process.

IV. Summary and Conclusions

At the end of its second year, the Peninsula Academies program appears to be meeting many of its objectives and to be making good progress toward others. The optimistic forecast for the program expressed in our first annual report seems to have been merited; a similar forecast can be made on the basis of this year's accomplishments.

Academy attendance rates are better than the averages for the schools as a whole and also better than attendance rates of a comparison group of non-Academy students with similar characteristics. Moreover, only one 10th grade Academy student who started the program in September 1982 dropped out of school altogether, compared to eight students from the control group. In addition, Academy students performed better on district proficiency tests compared to the non-Academy control group students; both their average scores and their pass rates exceeded those of the comparison students and many differences exceeded those that could be expected to occur by chance.

Results from our survey of students, parents, school personnel, and representatives of the private sector are favorable and enthusiastic for the most part. The four groups give the overall program high average ratings; school and industry personnel ratings of the program's implementation were 4.7 for school personnel and 5.1 for the private sector, which was more than one point higher than last year's rating.

Parents, students, and school personnel concur that the attitudes of most students toward school and toward themselves have been improved by the program. Special counseling support for Academies students, which was mentioned last year as an area needing improvement, was praised this year by a large majority of students and school personnel. The career planning component of the program, including the field trips and other special motivational, career-related activities, was also well received and apparently had a positive impact: 80% of the students said they now have definite career goals and 65% of their parents said their children's knowledge of careers had increased as a result of the Academies. The mentor program also

received high marks from students, teachers, parents, and the mentors themselves.

Ratings from students, parents, and school personnel on the quality of the classroom level components of the program were also positive, with over half the survey respondents rating the facilities, equipment, books, learning materials, and instruction "excellent" or "good." Student ratings for these aspects of the program were slightly lower, however, than last year, with the exception of the rating for English instruction. Conversely, ratings from parents and from school personnel were more positive this year on almost every program component.

A most encouraging result from the survey was the very positive response to the effectiveness of overall program planning and management. In our 1982 survey, the most frequently mentioned problem for the Academies was in the area of planning and management, when only 34% of the school personnel and 29% of the private sector representatives rated planning and management as "excellent" or "good." This year, 57% of the school personnel and 65% of the private sector representatives gave those high ratings.

While on the whole the data show very positive strides for the Academies this year, they also suggest some areas where changes might be made. The remainder of this section deals with program areas where opportunities for improvements exist.

As was true last year, some confusion exists about <u>roles and responsibilities in program management</u>.

- Most respondents recognize that the Academies are run by a school-industry-Coalition team, but they are still confused about who is responsible for specific aspects of the program. Lines of authority are still not clear.
- Many teachers felt their school's administration is only "somewhat" supportive of the program, rather than "very supportive."

- The mentors, particularly, were unsure about who is running the Academies. They would like to have more communication with program staff and a clearer overview of the Academies operation and goals.

A closely related problem is that of curriculum planning and development. This problem persists from last year, although progress has been made, especially in the academic curriculum.

- There is uncertainty about who has responsibility for planning the Academies' curriculum. Almost everyone agrees that the teachers must be directly involved and that there is a need for someone to oversee the effort; but it is not clear who that someone should be--the instructional vice principals, the lead teachers, the Coalition director, or, in the case of lab instruction, the head lab teachers.

- There is still concern this year over the documentation of the lab curriculum, especially for the Computer Academy, which does not have the advantage of a well-accepted state curriculum to use as a basic structure, as does the Electronics Academy.

- Coordination of the lab and academic curricula has still not been achieved to any great extent. Information from students and teachers alike confirm that academic and lab classes seldom relate to or reinforce one another. The reason for this given by most teachers is the lack of time for curriculum planning. For the most part, the academic teachers have little knowledge of what is being taught in the electronics or computer classes and little opportunity to find out.

Some problems in the area of instruction remain.

- The industry-loaned lab instructor model was criticized because (1) the loaned instructors did not have sufficient orientation to teaching, (2) they did not receive needed support at the schools, and (3) many students resented having a change of instructors mid-year at one Academy.

- There was a discrepancy between the responses of students and teachers regarding the availability of individual instructional assistance, such as tutoring. The teachers said such instruction was frequently provided or made available, but many students mentioned the need for more tutoring.

- Building continuity in the teaching staff has been a problem for the Academies. Ideally, new teachers would have an orientation before the school year begins, and staff would

have common release periods when they could meet and coordinate their efforts. Nearly all the teachers were new to the Academies again this year, and, at one Academy, teachers came into the program after the start of the fall semester. At this Academy, also, teachers' schedules did not allow much time for coordination.

- While ratings of the Academies' monitoring and feedback have improved dramatically over last year (in 1982, only 28% of the school personnel rated these "excellent" or "good" compared to 62% this year), there is still room for improving feedback, especially for the mentors. Many mentors are uncertain about their objectives and about how their efforts have been received.

- Dropouts pose several problems for the program: (1) dropouts mean lower enrollment, which threatens the efficiency of the program; (2) dropping students defeats one major purpose of the program, which is to give potential dropouts special help; (3) too many dropouts may be an indication that the selection process is faulty; (4) too many student-requested drops indicate that expectations are not being met. The dropout rate for this year for the two Academies combined fell to 23%, from 37% last year--a big improvement. In addition, fewer students dropped voluntarily. Nevertheless, the dropout issue raises questions: What kind of student should or should not be admitted to the program? How many chances should a problem student be given before being dropped? The answers to these questions remain unclear.

- Keeping parents informed about the program remains a problem. Parents like the program, but few of them are actively involved and few appear to understand how the program differs from the regular high school program. The lack of direct involvement may be because parents are too busy to attend school functions, but whether or not they participate directly, parents can be kept informed so they can support students' efforts at home.

- Private sector representatives expressed concern about keeping industry actively involved in the Academies. They were concerned about irregular attendance of business representatives at Steering Committee meetings and attributed this to lack of specific roles to play or assignments to complete. They are also concerned about the financial stability of the program and about how the district's long-term financial plans for the Academies are being shaped.

- Other weak areas include insufficient classroom space for the Computer Academy; the need for more modern equipment that would be compatible with the texts for the Electronics Academy; adjustment problems for those students who transfer

schools to be in an Academy; and scheduling problems for students who wish to take more non-Academy electives.

At the end of two years, the Academy program appears to be healthy and functioning well; and it is working especially well at the classroom level. The students are motivated, attending classes, and improving their skills. It is hoped that the information on the program weaknesses mentioned in this report will assist the Academies management and staff to move forward to an even stronger program in 1983-84, when the program will be in full operation and will graduate its first senior class.